Look Out for Leaf Scorch

Nurserymen and landscapers can help rein in a disease that slowly dooms trees—including hundreds of oaks and elms in and near the historic Mall in Washington, D.C. Many of the Mall's century-old trees are infected with bacterial leaf scorch. Nothing can be done to save them. This is also true for "scorched" oaks, elms, sycamores, and maples in California, Kentucky, Maryland, Nebraska, New Jersey, New York, and Texas. But future generations of trees—and tree-lovers—would benefit if nursery operators would carefully check young trees and destroy infected ones.

Xylella fastidiosa bacteria cause the disease. The microbes clog tree xylem, the tissue that carries water from the roots. Xylem-feeding insects harbor and spread the bacteria. Warning signs of leaf scorch include browning of leaves that begins at their outer edges and spreads inward. Symptoms recur each year, spreading over the tree's crown, with stunted growth and branches that don't revive in spring. A lab test using tree sap is conclusive. Landscapers—particularly for large projects such as subdivisions—should be vigilant. Planting a variety of tree species may raise the odds of some surviving an outbreak. ARS scientists in cooperation with the U.S. Department of the Interior have identified some control strategies. They are also searching for trees with natural resistance. *Jo-Ann Bentz, USDA-ARS Floral and Nursery Plants Research Unit, U.S. National Arboretum, Beltsville, Maryland; phone (301) 504-8260, e-mail jbentz@asrr.arsusda.gov*

Preemptive Strike Against Salmonella

A new product from ARS research significantly cuts the odds of chickens' getting infected by *Salmonella* microbes at the farm. The Food and Drug Administration recently approved use of an ARS-developed blend of beneficial bacteria called Preempt. The product was developed through a partnership between ARS and MS Bioscience of Dundee, Illinois, which licensed the ARS technology. Preempt can be applied in a mist to newly hatched chicks. It introduces 29 bacteria naturally present in healthy adult chickens. The "good" bacteria block sites where *Salmonella* might take hold on the chicks' intestinal walls. Instead, the pathogens pass harmlessly from the chicks' bodies. In one set of field tests using 80,000 chickens, 7 percent of untreated chickens harbored *Salmonella*, compared to 0 percent for "Preempted" birds. Studies suggest Preempt also helps protect chicks against listeria, *E. coli* O157:H7, and campylobacter. It can be part of comprehensive measures for reducing salmonella and other pathogen risks. But the meat must still be properly handled and thoroughly cooked. Most cases of disease-causing salmonella infections in humans are traced to raw or undercooked meat, poultry, milk, and eggs. A Preempt-like product from the same ARS research team is being tested in pigs. *Donald Corrier, USDA-ARS Food Animal Protection Research Laboratory, College Station, Texas; phone (409) 260-9484, e-mail steele@usda.tamu.edu*

Dragnet for Cucumber Mosaic Virus

Growers, producers, and exporters can detect foreign and domestic strains of cucumber mosaic virus with a new commercial test developed from ARS research. CMV attacks tomatoes, cucumbers, and many other crops. In 1992, it plagued the tomato crop in parts of Alabama, forcing some growers out of business. A comprehensive, effective detection test might have saved some of them, because uprooting and removing infected plants is key to preventing the virus' spread. In earlier studies, ARS scientists collected more than 140 CMV strains from around the world. They developed antibodies that react to strains found in the United States and abroad and used them as the basis for the new test. Agdia, Inc., of Elkhart, Indiana, commercialized the test. To use it, the farmer or nursery operator touches a newly cut leaf or stem to a specially coated, paperlike membrane. At an agricultural extension office or laboratory, the membrane is treated with antibody-containing solutions. A color change at the touched spot indicates CMV is present. The test can be used for general detection of the virus or adapted to look for specific virus subgroups. *Hei-Ti Hsu, USDA-ARS Floral and Nursery Plants Research Unit, Beltsville, Maryland; phone (301) 504-5657, e-mail hthsu@asrr.arsusda.gov*